Radiance Variations of the Quiet Solar Transition Region

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We investigate the variability of EUV emission lines during the solar minimum and the ascending phase of the present solar activity cycle. The radiances have been measured at the center of the solar disk at quiet-Sun locations using the vacuum-ultraviolet telescope-spectrograph SUMER (Solar Ultraviolet Measurements of Emitted Radiation) on the Solar and Heliospheric Observatory (SOHO). The lines that have been measured from March 1996 to the present are He I 584 Å, Mg X 609 Å and 624 Å, Ne VIII 770 Å, N V 1238 Å, and the H I Lyman continuum at 880 Å. The He I 584 Å line shows the smallest variation. Radiances of the transition region and coronal lines show an increasing trend of up to 100% after the sunspot minimum. The results indicate a global variability of the quiet solar transition region network that is related to the solar activity cycle. Our spatially resolved images allow a separation of the network and internetwork areas. A critical review is made of the long-term stability of the responsivity of the SUMER instrument.